
SPACEX

1
00:00:10,629 --> 00:00:02,149
helium checkout is aborted nominally t

2
00:00:14,629 --> 00:00:13,030
at t minus three seconds

3
00:00:29,830 --> 00:00:14,639
the nine merlin engines of the first

4
00:00:34,709 --> 00:00:30,870
two

5
00:00:39,350 --> 00:00:36,310
and liftoff

6
00:00:41,350 --> 00:00:39,360
liftoff of the spacex falcon 9 rocket

7
00:00:43,590 --> 00:00:41,360
launching dragon to the international

8
00:00:55,110 --> 00:00:43,600
space station and returning cargo

9
00:00:55,120 --> 00:01:06,630
starting gravity turn

10
00:01:06,640 --> 00:01:18,310
jd mta acquisition a signal

11
00:01:23,429 --> 00:01:21,350
d plus 45 seconds

12
00:01:26,550 --> 00:01:23,439
one minute and 10 seconds after liftoff

13
00:01:28,230 --> 00:01:26,560

the falcon 9 will reach supersonic speed

14
00:01:29,910 --> 00:01:28,240
passing through the area of maximum

15
00:01:35,830 --> 00:01:29,920
dynamic pressure

16
00:01:35,840 --> 00:01:39,429
on a nominal trajectory of 5

17
00:01:46,069 --> 00:01:41,109
meters kilometers second

18
00:01:46,079 --> 00:01:56,230
vehicle is supersonic

19
00:02:00,149 --> 00:01:58,230
falcon now through

20
00:02:01,830 --> 00:02:00,159
maximum aerodynamic pressure

21
00:02:03,670 --> 00:02:01,840
this is the point where the mechanical

22
00:02:05,670 --> 00:02:03,680
stress on the rocket reaches its peak

23
00:02:07,670 --> 00:02:05,680
because of the rocket's velocity and the

24
00:02:18,229 --> 00:02:07,680
resistance created by the atmosphere of

25
00:02:18,239 --> 00:02:25,910
second stage will start an engine chill

26
00:02:30,309 --> 00:02:28,150
coming up on two minutes everything is

27
00:02:40,470 --> 00:02:30,319
go all nine merlin engines performing

28
00:02:44,790 --> 00:02:41,830
about two and a half minutes into the

29
00:02:46,710 --> 00:02:44,800
flight 56 miles high and traveling at 10

30
00:02:48,630 --> 00:02:46,720
times the speed of sound

31
00:02:51,509 --> 00:02:48,640
two of the first stage engines will shut

32
00:03:15,589 --> 00:02:51,519
down to reduce the rocket's acceleration

33
00:03:45,270 --> 00:03:18,710
approaching me go one

34
00:03:45,280 --> 00:03:49,910
past the mid mico point

35
00:03:56,630 --> 00:03:51,670
first stage shutdown

36
00:04:00,869 --> 00:03:58,309
the first and second stages are

37
00:04:14,390 --> 00:04:00,879
separating

38
00:04:18,629 --> 00:04:16,469

the second stage's single merlin vacuum

39
00:04:20,710 --> 00:04:18,639
engine is igniting to begin a six minute

40
00:04:41,350 --> 00:04:20,720
14 second burn that will bring dragon

41
00:04:41,360 --> 00:04:47,909
the dragon nose gun has been jettisoned

42
00:04:52,790 --> 00:04:50,310
as planned 40 seconds after second stage

43
00:04:58,230 --> 00:04:52,800
ignition the dragon's protective nose

44
00:05:02,629 --> 00:04:59,510
everything perceived

45
00:05:04,390 --> 00:05:02,639
150 kilometers velocity is 3.1

46
00:05:07,909 --> 00:05:04,400
kilometers per second and downrange

47
00:05:09,510 --> 00:05:07,919
distance of 350 kilometers

48
00:05:12,150 --> 00:05:09,520
second stage propelling utilization

49
00:05:17,990 --> 00:05:15,270
avionic systems nominal

50
00:05:20,710 --> 00:05:18,000
four minutes 42 seconds into flight

51
00:05:22,870 --> 00:05:20,720
everything is go

52
00:05:35,990 --> 00:05:22,880
falcon 9 and dragon on their way to the

53
00:05:36,000 --> 00:05:48,710
new hampshire acquisition a signal

54
00:05:53,670 --> 00:05:51,350
five minutes 16 seconds into flight

55
00:05:57,749 --> 00:05:53,680
another four minutes

56
00:05:59,749 --> 00:05:57,759
altitude 163 kilometers velocity is 3.5

57
00:06:07,590 --> 00:05:59,759
kilometers per second

58
00:06:13,029 --> 00:06:09,189
about three and a half minutes of flight

59
00:06:16,230 --> 00:06:13,039
left for the second stage engine

60
00:06:19,350 --> 00:06:16,240
set to cut off at nine minutes 14

61
00:06:27,110 --> 00:06:21,029
and back in stage two propulsion systems

62
00:06:27,120 --> 00:06:34,629
avionics system and rf link is solid

63
00:06:37,990 --> 00:06:36,870

lc this is awesome

64
00:06:40,390 --> 00:06:38,000
go ahead

65
00:06:42,790 --> 00:06:40,400
yes sir i've uh looked around the pad it

66
00:06:45,350 --> 00:06:42,800
looks like the only place we have any

67
00:06:46,309 --> 00:06:45,360
even a small fire is on the tee on the

68
00:06:48,950 --> 00:06:46,319
deck

69
00:06:50,309 --> 00:06:48,960
uh i recommend that when fire department

70
00:06:52,710 --> 00:06:50,319
gets here they go you can go ahead and

71
00:06:54,309 --> 00:06:52,720
do their sweep over copy that pad

72
00:06:56,390 --> 00:06:54,319
secured they can go on the vehicle

73
00:06:59,430 --> 00:06:56,400
remains on a nominal trajectory

74
00:07:03,029 --> 00:06:59,440
is 186 kilometers velocity is four

75
00:07:05,029 --> 00:07:03,039
kilometers per second

76
00:07:10,070 --> 00:07:05,039
six minutes 30 seconds into the flight

77
00:07:45,830 --> 00:07:11,670
brief discussion about a fire at the

78
00:07:49,270 --> 00:07:47,029
seven minutes

79
00:07:51,029 --> 00:07:49,280
14 seconds into flight

80
00:07:52,710 --> 00:07:51,039
everything is normal

81
00:07:54,469 --> 00:07:52,720
trajectory

82
00:07:56,150 --> 00:07:54,479
pressure

83
00:08:02,150 --> 00:07:56,160
everything is fine with the falcon and

84
00:08:05,830 --> 00:08:03,430
the vehicle remains at a nominal

85
00:08:08,469 --> 00:08:05,840
trajectory altitude of 200 kilometers

86
00:08:10,950 --> 00:08:08,479
and velocity of 4.9 kilometers per

87
00:08:15,270 --> 00:08:13,589
lc this is osm they're just about there

88
00:08:17,909 --> 00:08:15,280

i recommend we go ahead and go into

89
00:08:19,189 --> 00:08:17,919
amber over copy please do

90
00:08:21,350 --> 00:08:19,199
roger do whatever you gotta do to get

91
00:08:35,029 --> 00:08:21,360
them in there pad safe

92
00:08:35,039 --> 00:08:45,430
eight minutes into flight

93
00:08:59,910 --> 00:08:46,790
vehicles passing through the head-on

94
00:09:03,670 --> 00:09:02,790
eight minutes 27 seconds into the flight

95
00:09:06,389 --> 00:09:03,680
of

96
00:09:07,990 --> 00:09:06,399
falcon 9 and dragon

97
00:09:09,590 --> 00:09:08,000
on the first commercial resupply

98
00:09:11,350 --> 00:09:09,600
services mission to the international

99
00:09:12,550 --> 00:09:11,360
space station everything is operating

100
00:09:15,030 --> 00:09:12,560
normally

101
00:09:20,470 --> 00:09:15,040
about 45 seconds away from

102
00:09:25,190 --> 00:09:23,030
fts has been saved vehicles in terminal

103
00:10:06,310 --> 00:09:25,200
guidance mode

104
00:10:06,320 --> 00:10:12,230
iip lift

105
00:10:12,240 --> 00:10:23,030
and actually done confirmed

106
00:10:28,710 --> 00:10:25,269
falcon 9 and dragon are in orbit

107
00:10:30,630 --> 00:10:28,720
perigee 197 kilometers apogee 328

108
00:10:33,190 --> 00:10:30,640
kilometers

109
00:10:35,990 --> 00:10:33,200
and a successful launch for falcon 9 and

110
00:10:37,990 --> 00:10:36,000
dragon as they reach orbit second

111
00:10:43,269 --> 00:10:38,000
stage engine has cut off

112
00:10:43,279 --> 00:10:56,389
dragon deploy commanded

113
00:10:56,399 --> 00:11:00,389

dragon's boy confirmed

114
00:11:15,990 --> 00:11:02,230
and we have confirmation dragon has

115
00:11:28,710 --> 00:11:18,230
a picture-perfect launch and a flawless

116
00:11:35,350 --> 00:11:32,150
10 minutes 55 seconds into flight

117
00:11:58,230 --> 00:11:35,360
and dragon will deploy your solar arrays

118
00:12:04,470 --> 00:12:00,470
lc this is osm i wanted to let you know